

# PATENT ABSTRACTS OF JAPAN

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## (54) CONTAINER-PACKED MAYONNAISE-LIKE FOOD

### (57)Abstract:

PROBLEM TO BE SOLVED: To obtain a container-packed mayonnaise-like food capable of keeping the just-produced taste for a long period by formulating a specific hydrolysate.

SOLUTION: A hydrolysate of defatted yolk is added. It is preferable that the container is flexible, and the hydrolysate of defatted yolk is obtained by acid hydrolysis or the combination of acid hydrolysis and enzymatic hydrolysis. Further, the content of the hydrolysate of defatted yolk based on the total weight of a mayonnaise-like food is preferably 0.01-1 wt.% in terms of the dried product. The defatted yolk is prepared by removing yolk fat from yolk, and it is commonly obtained as follows: a yolk liquid obtained by breaking an egg and collecting the yolk liquid portion from the whole egg is once dried; the obtained dried yolk is treated, for example, with an alcohol to extract the yolk fat, which is soluble in the alcohol; and the filtration residue is dried.

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CLAIMS

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[Claim(s)]

[Claim 1] Container stuffing mayonnaise Mr. food characterized by containing the hydrolyzate of the cleaning yolk.

[Claim 2] Container stuffing mayonnaise Mr. food according to claim 1 whose container is a flexible container.

[Claim 3] Container stuffing mayonnaise Mr. food according to claim 1 or 2 which is the decomposition product with which the hydrolyzate of the cleaning yolk used together acid hydrolyzate or an acid, and zymolysis.

[Claim 4] Container stuffing mayonnaise Mr. food according to claim 1 to 3 whose content of the hydrolyzate of the cleaning yolk to mayonnaise Mr. food all weight is 0.01 - 1 % of the weight in dried food conversion.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the container stuffing mayonnaise Mr. food with which the flavor immediately after manufacture was maintained for a long period of time.

[0002]

[Description of the Prior Art] Mayonnaise, salad dressing, etc. are known as a model unit of mayonnaise Mr. food. However, it is in the inclination for the thing which has a taste thinner than such a conventional product and which has soft flavor to be demanded, with diversification of taste in recent years.

[0003] However, when container stuffing mayonnaise Mr. food is circulating in ordinary temperature and circulated the container stuffing mayonnaise Mr. food which has such flavor in ordinary temperature, it was sensitive in degradation of flavor compared with the conventional product, therefore usually could not but set up pull-date short unavoidably. The approach of on the other hand carrying out the nitrogen purge of the head space by the advance of a restoration technique etc. in recent years that degradation of flavor should be prevented is taken, and the container stuffing mayonnaise Mr. food which excelled before in flavor stability came to be obtained. However, since degradation of flavor advances gradually, in addition, it is still requested that much more desirable flavor is maintained for a long time. Especially, that inclination of this flavor degradation is more remarkable in flexible container stuffing mayonnaise Mr. food than canning or a bottled thing.

[0004] Then, the purpose of this invention is offering the container stuffing mayonnaise Mr. food with which the flavor immediately after manufacture is maintained for a long period of time.

[0005]

[Means for Solving the Problem] this invention persons came to complete this invention, as a result of repeating research wholeheartedly that the above-mentioned purpose should be attained. Namely, the container stuffing mayonnaise Mr. food with which this invention contained the hydrolyzate of (1) cleaning yolk, (2) Container stuffing mayonnaise Mr. food of (1) whose a container is a flexible container, (3) (1) or (2) container stuffing mayonnaise Mr. food which are the decomposition product with which the hydrolyzate of the cleaning yolk used together acid hydrolyzate or an acid, and zymolysis, (4) The content of the hydrolyzate of the cleaning yolk to mayonnaise Mr. food all weight is offering the container stuffing mayonnaise Mr. food of either (1) which is 0.01 - 1 % of the weight thru/or (3) by dried food conversion.

[0006]

[Embodiment of the Invention] In this invention, edible oil and fat, an egg, and vinegar are blended, edible oil and fat distributes to homogeneity in the aqueous phase, an emulsification condition is maintained, and mayonnaise Mr. food means the food which has pH in the range of 3-5. moreover, the mayonnaise Mr. food of this invention -- except for an above-mentioned food raw material -- for example, seasonings, such as sodium glutamate, sugar, salt, bean paste, catsup, soy sauce, many tastes, and red, spinach Chinese miso, the extractives of animals and plants, and mustard -- what blended various implement material, the paste-like objects of those, etc., such as flavor vegetables, such as spices, such as powder, pickle, and herbs, and \*\*\*\*, by request may be used, and mayonnaise, salad dressing, tartar sauce, etc. are mentioned as a model unit. Generally such mayonnaise Mr. food contains edible oil and fat 35 to 85% of the weight. Moreover, especially if the edible oil and fat used for this invention is edible oil and fat generally used as mayonnaise Mr. food, it is not limited, and the fats and oils obtained by performing chemical preparation to animal and vegetable oils, such as corn oil, cotton seed oil, safflower oil, olive oil, safflower oil, soybean oil, palm oil, palm oil, and fish oil, and these are mentioned.

[0007] Moreover, although the yolk and whole egg liquid which are usually blended with mayonnaise Mr. food are used

as an egg blended with the mayonnaise Mr. food of this invention, things which performed a certain processing, such as what denatured these with the thing processed with enzymes, such as a phospholipid dialytic ferment and a proteolytic enzyme, or pressurization, heating, etc., may be used. Moreover, what used these liquid as the dried food with spray drying (spray dry), freeze drying (freeze-dry), etc., the thing which carried out water return of this dried food further may be used.

[0008] Moreover, if it is vinegar usually used for food as vinegar blended with the mayonnaise Mr. food of this invention, which thing may be used, for example, rice vinegar, apple vinegar, wine vinegar, alcoholic vinegar, etc. will be mentioned.

[0009] To what the cleaning yolk meant what removed the yolk lipid from the yolk in this invention, once dried the yolk liquid obtained by usually carrying out egg-breaking separation of the bird's egg, and was made into the dried yolk For example, alcohol (water alcohol of 90 - 99 capacity %) is made to act, and a meltable yolk lipid (mainly a triglyceride, cholesterol, and phospholipid) is extracted to alcohol, and after removing the alcoholic fraction which contained the yolk lipid by filtration, filtration residue is dried and it is obtained.

[0010] Moreover, in this invention, the hydrolyzate of the cleaning yolk is obtained by hydrolyzing the above-mentioned cleaning yolk combining a kind or two sorts or more of approaches (for example, a sodium hydroxide, a potassium hydroxide, etc.), such as acids (for example, a hydrochloric acid, a sulfuric acid, a nitric acid, an acetic acid, etc.), an enzyme (for example, proteolytic enzymes (a papain, pancreatin, etc.)), and alkali. As the below-mentioned example of a trial shows especially, the decomposition product which used together acid hydrolyzate or an acid, and zymolysis takes effect more and is desirable.

[0011] Moreover, the content of the hydrolyzate of the cleaning yolk to mayonnaise Mr. food all weight has 0.01 - 1 desirable % of the weight at dried food conversion. If fewer than 0.01 % of the weight, even if sufficient flavor degradation prevention effectiveness will be hard to be acquired and it will make [ more ] it on the other hand than 1 % of the weight, effectiveness to the extent that [ which responded to the content ] it is expectable is hard to be acquired.

[0012] Although the typical preparation approach of the hydrolyzate of the cleaning yolk used for this invention is explained below, it does not limit to these approaches. First, an example of the preparation approach of the cleaning yolk used for a raw material is explained.

[0013] the yolk liquid which breaks a hen's egg and is obtained from albumen liquid by dissociating -- for example, spray drying (spray dry) -- law or freeze drying (freeze-dry) -- it dries with desiccation means, such as law, (although desiccation is not indispensable, yolk lipid extraction removal of degree process becomes easy by desiccation). next, the dried-yolk 1 section -- alcohol (ethanol concentration about 90 to 99 capacity % --) The five to moisture concentration about ten to 1 capacity %20 section is made to act, and it is a yolk lipid (mainly) meltable to alcohol. A triglyceride, cholesterol, and phospholipid are extracted. The filter press, Remove the alcoholic fraction which contained the yolk lipid by the filtration approaches, such as an expression, and said alcohol is made to act on filtration residue further if needed, after an extract / filtration, filtration residue is dried and moisture and alcohol are evaporated.

[0014] Next, an example of the approach of hydrolysis is explained.

A. To the acid adding-water part solution method cleaning yolk 1 section, add the hydrochloric acid of 0.5 - 6 mol/L of the five to 40 section, or the sulfuric acid of 0.25 - 7.5 mol/L, for example, process at 50-100 degrees C under ordinary pressure for 30 minutes to about 24 hours, desalt further after neutralization filtration and if needed, and obtain the water solution of the decomposition product of the cleaning yolk.

[0015] B. To the enzyme part solution method cleaning yolk 1 section, add Shimizu of the ten to 40 section, a proteolytic enzyme, for example, a papain, pancreatin, etc. are added so that it may become 0.5 - 20 % of the weight to the cleaning yolk, and process at the optimal pH and temperature of an enzyme for about 5 to 40 hours, filter an enzyme after deactivation with heating, and obtain the water solution of the decomposition product of the cleaning yolk.

[0016] C. To the alkali hydrolyzing method cleaning yolk 1 section, add the sodium hydroxide of 0.5 - 3 mol/L of the five to 40 section, or a potassium hydroxide, for example, process at 40-100 degrees C under ordinary pressure for 30 minutes to about 8 hours, desalt further after neutralization filtration and if needed, and obtain the water solution of the decomposition product of the cleaning yolk.

[0017] As opposed to the approach cleaning yolk 1 section which used an acid and zymolysis together D. The hydrochloric acid of 0.5 - 6 mol/L of the five to 40 section, Or add the sulfuric acid of 0.25 - 7.5 mol/L, for example, it processes at 50-100 degrees C under ordinary pressure for 30 minutes to about 24 hours. Next, after adjusting to the optimal pH of a proteolytic enzyme, a proteolytic enzyme is added so that it may become 0.1 - 20% to the dried food of the cleaning yolk, and it processes with the optimum temperature of an enzyme for about 5 to 40 hours, an enzyme is desalted after deactivation filtration and if needed from heating, and the water solution of the decomposition product of the cleaning yolk is obtained.

[0018] The water solution of the hydrolyzate of the cleaning yolk obtained by the various hydrolyzing methods is good also as a dry matter by request by the drying methods, such as freeze drying (freeze-dry) or spray drying (spray dry).

[0019] This invention serves as desirable food maintained in the flavor immediately after manufacture for the first time for a long period of time by making mayonnaise Mr. food contain the hydrolyzate of the cleaning yolk obtained by the above-mentioned approach etc.

[0020] In addition to an above-mentioned food raw material, in the range which does not spoil the effectiveness of this invention, various food raw materials can be suitably chosen as the container stuffing mayonnaise Mr. food of this invention, and can be blended with it. For example, surfactants, such as thickeners, such as xanthan gum, locust bean gum, gellant gum, tamarind seed gum, starch, and modified starch, and sucrose fatty acid ester, a sorbitan fatty acid ester, polyglyceryl fatty acid ester, phospholipid, and lysophospholipid, etc. are mentioned.

[0021] Moreover, as a container, if it uses for mayonnaise Mr. food, it will not limit especially. However, generally the flexible container in the inclination for flavor to tend to deteriorate compared with canning or bottling is used from the good thing of a use kitchen. What mixed and carried out blow molding of a kind of thermoplastics, such as polyethylene, polypropylene, ethylene vinyl acetate, an ethylene-vinylalcohol copolymer, and polyethylene terephthalate, or the two sorts or more as the quality of the material of a flexible container, the thing which carried out the laminating of the layer which consists of these thermoplastics more than the bilayer, and carried out blow molding are used.

[0022] Next, this invention is further explained to a detail based on an example and the example of a trial.

[0023]

[Example] [Example 1]

A. The preparation hen's egg of the cleaning yolk was broken, moisture was removed for 10kg of yolk liquid obtained from albumen liquid by dissociating by the spray drying method, and 4.8kg of dried yolks was obtained. 95 capacity % ethanol 20L was added to 4kg of this dried yolk, and the alcoholic fraction which contained the yolk lipid by filtration after stirring for 30 minutes at 30 degrees C was removed. Furthermore, filtration residue was filtered after washing by 95 capacity % ethanol 2L, and the yolk lipid in residue was removed. Next, ethanol was removed for this filtration residue at 50 degrees C under reduced pressure, and 1.7kg of cleaning yolks was obtained. In addition, this cleaning yolk contained the yolk lipid about 15% of the weight.

[0024] B. 2 mol/L solution of hydrochloric acid was 10L Added to 1kg of cleaning yolks obtained by the approach of the preparation above-mentioned of the hydrolyzate of the cleaning yolk, and it processed at 90 degrees C for 3 hours. Next, in 4 mol/L sodium-hydroxide water solution, after neutralization, it filtered, and it desalted by electrodialysis, and spray drying of the obtained solution was carried out, and the acid hydrolyzate of the cleaning yolk was obtained.

[0025] C. It was made to rough-emulsify, after making into homogeneity within a mixer 0.5kg of hydrolyzates, 14kg of whole egg liquid, 4.5kg (13 % of the weight of acidity) of vinegar, 2kg of Shimizu, 1.8kg of salt, and 1.7kg of very-refined sugar of the cleaning yolk obtained by the approach of the preparation above-mentioned of container stuffing mayonnaise Mr. food, adding gradually and carrying out degassing of the 75.5kg of the salad oil. Next, through finishing emulsification was immediately given to the colloid mill for this rough emulsification object. Next, after filling up the tube of 150g \*\* with 140g (mayonnaise Mr. food) of this emulsification object at a time and carrying out the nitrogen purge of the head space, it sealed and container stuffing mayonnaise Mr. food was obtained.

[0026] 2 mol/L sodium-hydroxide water solution was 10L Added to 1kg of cleaning yolks of the [example 2] example 1, and it processed at 70 degrees C for 3 hours. Next, after neutralizing by 3 mol/L solution of hydrochloric acid, it filtered and desalted by electrodialysis, and spray drying of the obtained solution was carried out, and the alkali hydrolyzate of the cleaning yolk was obtained. Container stuffing mayonnaise Mr. food was obtained using the hydrolyzate of this cleaning yolk by the preparation approach of the container stuffing mayonnaise Mr. food of an example 1, and the same approach.

[0027] [Example 3]

A. The preparation hen's egg of the cleaning yolk was broken, moisture was removed for 10kg of yolk liquid obtained from albumen liquid by dissociating by the spray drying method, and 4.8kg of dried yolks was obtained. 98 capacity % ethanol 20L was added to 4kg of this dried yolk, and the alcoholic fraction which contained the yolk lipid by filtration after stirring for 30 minutes at 30 degrees C was removed. Furthermore, 2 times washing and filtration of filtration residue were done by 98 capacity % ethanol 2L, and the yolk lipid in residue was removed. Next, ethanol was removed for this filtration residue at 50 degrees C under reduced pressure, and 1.5kg of cleaning yolks was obtained. In addition, this cleaning yolk contained the yolk lipid about 4% of the weight.

[0028] B. The 1.5 mol/L solution of hydrochloric acid was 15L Added to 1kg of cleaning yolks obtained by the approach of the preparation above-mentioned of the hydrolyzate of the cleaning yolk, and it processed at 90 degrees C

for 2 hours. Next, 20g (the Nagase Brothers Seikagaku, Inc. make, trade name "a food-grade purification papain") of proteolytic enzymes after adjusting to pH6.0 was added in 4 mol/L sodium-hydroxide water solution, and it processed at 50 degrees C for 6 hours. Next, heat-treatment was performed for this enzyme processing liquid for 30 minutes at 90 degrees C, deactivation of the enzyme was carried out, by 2kg of activated carbon, after decolorization, it filtered, and the obtained water solution was desalted by electrodialysis, it freeze-dried, and the decomposition product which used together the acid and zymolysis of the cleaning yolk was acquired.

[0029] C. Container stuffing mayonnaise Mr. food was obtained using the hydrolyzate of the cleaning yolk obtained by the approach of the preparation above-mentioned of container stuffing mayonnaise Mr. food by the preparation approach of the container stuffing mayonnaise Mr. food of an example 1, and the same approach.

[0030]

[Test Example(s)] [Example 1 of a trial] The container stuffing mayonnaise Mr. food obtained by the above-mentioned example 1 thru/or 3 was saved on 35-degree C promotion conditions under protection from light, a preservation article and the newly manufactured elegance immediately after manufacture were tried, and change of the flavor for every week was evaluated. In addition, with the contrast article of front Naka, it prepares without making the hydrolyzate of the cleaning yolk contain.

[0031]

[Table 1]

保存期間 [W]	対照品	実施例 1 (酸分解)	実施例 2 (7333分濃)	実施例 3 (酸と酵素併用)
0	-	-	-	-
1	-	-	-	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	±	-	-	-
6	±	-	-	-
7	+	-	±	-
8	+	-	±	-
9	++	±	+	±
10	++	+	+	+

[0032] \*\* Notation in a table

- :change nothing -- or it is satisfactory although flavor degradation is carried out very only -- range \*\*: -- ++: which is carrying out flavor degradation slightly and which is carrying out +:flavor degradation -- flavor degradation is carried out remarkably [0033] From Table 1, as for the thing which made the hydrolyzate of the cleaning yolk contain, it is understood that the flavor immediately after manufacture is maintained for a long period of time. Especially as for the thing using the decomposition product which used together the acid hydrolyzate or the acid, and zymolysis of the cleaning yolk, it is understood that the flavor immediately after manufacture is maintained further for a long period of time.

[0034] In the [example 2 of trial] example 1, except having changed into the amount (dried food conversion) which shows the content of the hydrolyzate of the cleaning yolk in Table 2, container stuffing mayonnaise Mr. food was prepared by the same approach, and the same approach as the example 1 of a trial estimated each obtained container stuffing mayonnaise Mr. food.

[0035]

[Table 2]

保存期間 [W]	脱脂卵黄の加水分解物の含有量					
	0%	0.005%	0.01%	0.1%	1%	1.5%
0	-	-	-	-	-	-
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	±	-	-	-	-	-
6	±	±	-	-	-	-
7	+	±	-	-	-	-
8	+	+	±	±	-	-
9	++	+	+	+	±	±
10	++	++	++	+	+	+

[0036] From Table 2, in order to maintain the flavor immediately after manufacture for a long period of time, even if it made it contain more mostly [ it having been / way / desirable and having made the hydrolyzate of the cleaning yolk contain at least 0.01% of the weight ] than 1 % of the weight, it is understood that the effectiveness according to a content is hard to be acquired.

[0037] As stated above, since the container stuffing mayonnaise Mr. food of this invention can maintain the flavor immediately after manufacture for a long period of time, expansion of the further need of container stuffing mayonnaise Mr. food is expected.

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(54) 【発明の名称】 容器詰めマヨネーズ様食品

(57) 【要約】

【課題】 製造直後の風味が長期間維持される容器詰めマヨネーズ様食品を提供する。

【解決手段】 脱脂卵黄の加水分解物を含有した容器詰めマヨネーズ様食品。



## 【特許請求の範囲】

【請求項 1】 脱脂卵黄の加水分解物を含有することを特徴とする容器詰めマヨネーズ様食品。

【請求項 2】 容器が可撓性容器である請求項 1 記載の容器詰めマヨネーズ様食品。

【請求項 3】 脱脂卵黄の加水分解物が酸加水分解物、あるいは酸及び酵素分解を併用した分解物である請求項 1 又は 2 記載の容器詰めマヨネーズ様食品。

【請求項 4】 マヨネーズ様食品全重量に対する脱脂卵黄の加水分解物の含有量が乾物換算で 0.01～1 重量 % である請求項 1 乃至 3 のいずれかに記載の容器詰めマヨネーズ様食品。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 本発明は、製造直後の風味が長期間維持された容器詰めマヨネーズ様食品に関する。

## 【0002】

【従来の技術】 マヨネーズ様食品の代表的製品としてマヨネーズやサラダドレッシング等が知られている。ところが、近年、嗜好の多様化に伴い従来のこのような製品よりも味の薄い、ソフトな風味を有するものが要望される傾向にある。

【0003】 しかしながら、通常、容器詰めマヨネーズ様食品は常温で流通されており、このような風味を有する容器詰めマヨネーズ様食品を常温で流通させると、従来の製品に比べ風味の劣化を感じやすく、そのため、やむを得ず賞味期限を短く設定せざるを得なかった。一方、近年充填技術等の進歩により、風味の劣化を防止すべくヘッドスペースを窒素置換する方法が採られ、以前よりは風味安定性に優れた容器詰めマヨネーズ様食品が得られるようになった。しかし、それでもなお風味の劣化は徐々に進行するため、より一層好ましい風味を長く維持することが要望されている。特に、この風味劣化は、缶詰あるいは瓶詰のものより、可撓性容器詰めマヨネーズ様食品において、その傾向が顕著である。

【0004】 そこで本発明の目的は、製造直後の風味が長期間維持される容器詰めマヨネーズ様食品を提供することである。

## 【0005】

【課題を解決するための手段】 本発明者らは、上記の目的を達成すべく鋭意研究を重ねた結果、本発明を完成するに至った。すなわち、本発明は、(1) 脱脂卵黄の加水分解物を含有した容器詰めマヨネーズ様食品、(2) 容器が可撓性容器である (1) の容器詰めマヨネーズ様食品、(3) 脱脂卵黄の加水分解物が酸加水分解物、あるいは酸及び酵素分解を併用した分解物である (1) 又は (2) の容器詰めマヨネーズ様食品、(4) マヨネーズ様食品全重量に対する脱脂卵黄の加水分解物の含有量が乾物換算で 0.01～1 重量 % である (1) 乃至 (3) のいずれかの容器詰めマヨネーズ様食品、を提供

することである。

## 【0006】

【発明の実施の形態】 本発明においてマヨネーズ様食品とは、食用油脂、卵及び食酢が配合され、食用油脂が水相中に均一に分散し乳化状態が維持され、pH が 3～5 の範囲にある食品をいう。また、本発明のマヨネーズ様食品は、上述の食品原料以外に例えば、グルタミン酸ナトリウム、砂糖、食塩、味噌、ケチャップ、醤油、諸味、豆板醤等の調味料、動植物のエキス類、からし粉等の香辛料、ピクルス、ハーブ類等の香味野菜、茹卵等の各種具材やそのペースト状物を所望により配合したものでよく、代表的製品としては例えば、マヨネーズ、サラダドレッシング、タルタルソース等が挙げられる。このようなマヨネーズ様食品は、一般的に食用油脂を 35～85 重量 % 含有している。また本発明に用いる食用油脂は一般的にマヨネーズ様食品として用いられている食用油脂であれば特に限定するものではなく例えば、コーン油、綿実油、サフラワー油、オリーブ油、紅花油、大豆油、ヤシ油、パーム油、魚油等の動植物油及びこれらに化学的処理を施して得られる油脂等が挙げられる。

【0007】 また、本発明のマヨネーズ様食品に配合する卵としては、マヨネーズ様食品に通常配合されている卵黄や全卵液を用いるが、これらをリン脂質分解酵素や蛋白質分解酵素等の酵素で処理したもの、あるいは加圧や加熱等で変性させたもの等、何らかの処理を施したものをを用いてもよい。また、これらの液を噴霧乾燥（スプレードライ）や凍結乾燥（フリーズドライ）等により乾物としたもの、さらにはこの乾物を水戻ししたもの等を用いてもよい。

【0008】 また、本発明のマヨネーズ様食品に配合する食酢としては、通常食品に用いられている食酢であれば何れのものでもよく、例えば、米酢、リンゴ酢、ワインビネガー、アルコール酢等が挙げられる。

【0009】 本発明において脱脂卵黄とは、卵黄から卵黄脂質を除去したものをいい、通常鳥卵を割卵分離して得られる卵黄液を、一旦乾燥して乾燥卵黄としたものに、例えばアルコール（90～99 容量 % の含水アルコール）を作用させてアルコールに可溶な卵黄脂質（主に、トリグリセリド、コレステロール及びリン脂質）を抽出し、濾過により卵黄脂質を含有したアルコール画分を除去後、濾過残渣を乾燥させて得られる。

【0010】 また、本発明において脱脂卵黄の加水分解物は、上述の脱脂卵黄を酸（例えば、塩酸、硫酸、硝酸、酢酸等）、酵素（例えば、蛋白質分解酵素（パパイン、パンクレアチン等）、アルカリ（例えば、水酸化ナトリウム、水酸化カリウム等）等の一種又は二種以上の方法を組み合わせて加水分解することにより得られる。特に、後述の試験例で示すように、酸加水分解物、あるいは酸及び酵素分解を併用した分解物は、より効果を奏し好ましい。

【0011】また、マヨネーズ様食品全重量に対する脱脂卵黄の加水分解物の含有量は乾物換算で0.01~1重量%が好ましい。0.01重量%より少ないと十分な風味劣化防止効果が得られ難く、一方、1重量%より多くしても含有量に応じた期待できる程の効果が得られ難い。

【0012】本発明に使用する脱脂卵黄の加水分解物の代表的な調製方法を以下に説明するが、これらの方法に限定するものではない。まず、原料に用いる脱脂卵黄の調製方法の一例を説明する。

【0013】鶏卵を割卵し、卵白液から分離して得られる卵黄液を、例えば、噴霧乾燥（スプレードライ）法あるいは凍結乾燥（フリーズドライ）法等の乾燥手段により乾燥する（乾燥は必須ではないが、乾燥により次工程の卵黄脂質の抽出除去が容易となる）。次に、乾燥卵黄1部にアルコール（エタノール濃度約90~99容量%、水分濃度約10~1容量%）5~20部を作用させてアルコールに可溶性卵黄脂質（主に、トリグリセリド、コレステロール及びリン脂質）を抽出し、フィルタープレス、圧搾濾過等の濾過方法により卵黄脂質を含有したアルコール画分を除去し、必要に応じ濾過残渣に前記アルコールをさらに作用させて抽出・濾過後、濾過残渣を乾燥させて水分やアルコールを蒸発させる。

【0014】次に、加水分解の処理法の一例を説明する。

#### A. 酸加水分解法

脱脂卵黄1部に対し、5~40部の0.5~6mol/Lの塩酸、あるいは0.25~7.5mol/Lの硫酸を添加し、例えば常圧下では50~100℃で30分~24時間程度処理し、中和後、濾過、必要に応じ更に脱塩し、脱脂卵黄の分解物の水溶液を得る。

#### 【0015】B. 酵素分解法

脱脂卵黄1部に対し、10~40部の清水を加え、蛋白質分解酵素、例えばパパイン、パンクレアチン等を脱脂卵黄に対し0.5~20重量%となるように添加し、酵素の至適pH及び温度にて5~40時間程度処理し、加熱により酵素を失活後、濾過し脱脂卵黄の分解物の水溶液を得る。

#### 【0016】C. アルカリ加水分解法

脱脂卵黄1部に対し、5~40部の0.5~3mol/Lの水酸化ナトリウム、あるいは水酸化カリウムを添加し、例えば常圧下では40~100℃で30分~8時間程度処理し、中和後、濾過、必要に応じ更に脱塩し、脱脂卵黄の分解物の水溶液を得る。

#### 【0017】D. 酸及び酵素分解を併用した方法

脱脂卵黄1部に対し、5~40部の0.5~6mol/Lの塩酸、あるいは0.25~7.5mol/Lの硫酸を添加し、例えば常圧下では50~100℃で30分~24時間程度処理し、次に、蛋白質分解酵素の至適pHに調整後、蛋白質分解酵素を脱脂卵黄の乾物に対し0.

1~20%となるように添加し、酵素の至適温度にて5~40時間程度処理し、加熱より酵素を失活後、濾過、必要に応じ脱塩し、脱脂卵黄の分解物の水溶液を得る。

【0018】各種加水分解法で得られた脱脂卵黄の加水分解物の水溶液は、所望により凍結乾燥（フリーズドライ）又は噴霧乾燥（スプレードライ）等の乾燥法で乾燥物としてもよい。

【0019】本発明は、上述の方法等で得られた脱脂卵黄の加水分解物をマヨネーズ様食品に含有させることにより、はじめて製造直後の風味を長期間維持された好ましい食品となる。

【0020】本発明の容器詰めマヨネーズ様食品には、上述の食品原料以外に本発明の効果を損なわない範囲で各種食品原料を適宜選択し配合することが出来る。例えば、キサンタンガム、ローカストビーンガム、ジェランガム、タマリンド種子ガム、澱粉、化工澱粉等の増粘剤、また、ショ糖脂肪酸エステル、ソルビタン脂肪酸エステル、ポリグリセリン脂肪酸エステル、リン脂質、リゾリン脂質等の界面活性剤等が挙げられる。

【0021】また、容器としては、マヨネーズ様食品に用いるものであれば、特に限定するものではない。しかし、缶詰あるいは瓶詰に比べ風味が劣化しやすい傾向にある可撓性容器が使用勝手のよいことから、一般的に用いられている。可撓性容器の材質としては、ポリエチレン、ポリプロピレン、エチレン酢酸ビニル、エチレンービニルアルコール共重合体、ポリエチレンテレフタレート等の熱可塑性プラスチックの一種又は二種以上を混合し中空成形したものや、これらの熱可塑性プラスチックからなる層を二層以上に積層し中空成形したもの等が用いられている。

【0022】次に、本発明を実施例及び試験例に基づき、さらに詳細に説明する。

#### 【0023】

##### 【実施例】【実施例1】

#### A. 脱脂卵黄の調製

鶏卵を割卵し、卵白液から分離して得られた卵黄液10kgを、噴霧乾燥法により水分を除去し乾燥卵黄4.8kgを得た。この乾燥卵黄4kgに95容量%エタノール20Lを加え、30℃で30分間攪拌後、濾過により卵黄脂質を含有したアルコール画分を除去した。さらに、濾過残渣を95容量%エタノール2Lで洗浄後、濾過し、残渣中の卵黄脂質を除去した。次に、この濾過残渣を減圧下50℃でエタノールを除去して脱脂卵黄1.7kgを得た。なお、この脱脂卵黄は、卵黄脂質を約15重量%含有していた。

#### 【0024】B. 脱脂卵黄の加水分解物の調製

前述の方法で得られた脱脂卵黄1kgに2mol/L塩酸溶液を10L加え、90℃で3時間処理した。次に、4mol/L水酸化ナトリウム水溶液で中和後、濾過し、電気透析で脱塩し、得られた溶液を噴霧乾燥し脱脂

卵黄の酸加水分解物を得た。

【0025】C. 容器詰めマヨネーズ様食品の調製  
前述の方法で得られた脱脂卵黄の加水分解物0.5kg、全卵液14kg、食酢（酸度13重量%）4.5kg、清水2kg、食塩1.8kg及び上白糖1.7kgをミキサー内で均一とした後、サラダ油75.5kgを徐々に添加し、脱気させながら粗乳化させた。次にこの粗乳化物を直ちにコロイドミルに通し仕上げ乳化を施した。次に、この乳化物（マヨネーズ様食品）を150g容のチューブに140gずつ充填し、ヘッドスペースを窒素置換した後、密封し、容器詰めマヨネーズ様食品を得た。

【0026】【実施例2】実施例1の脱脂卵黄1kgに2mol/L水酸化ナトリウム水溶液を10L加え、70℃で3時間処理した。次に、3mol/L塩酸溶液で中和した後、濾過し、電気透析で脱塩し、得られた溶液を噴霧乾燥し脱脂卵黄のアルカリ加水分解物を得た。この脱脂卵黄の加水分解物を用い実施例1の容器詰めマヨネーズ様食品の調製方法と同様な方法で容器詰めマヨネーズ様食品を得た。

#### 【0027】【実施例3】

##### A. 脱脂卵黄の調製

鶏卵を割卵し、卵白液から分離して得られた卵黄液10kgを、噴霧乾燥法により水分を除去し乾燥卵黄4.8kgを得た。この乾燥卵黄4kgに98容量%エタノール20Lを加え、30℃で30分間攪拌後、濾過により卵黄脂質を含有したアルコール画分を除去した。さらに、濾過残渣を98容量%エタノール2Lで2回洗浄・濾過し残渣中の卵黄脂質を除去した。次に、この濾過残渣を減圧下50℃でエタノールを除去して脱脂卵黄1.5kgを得た。なお、この脱脂卵黄は、卵黄脂質を約4重量%含有していた。

##### 【0028】B. 脱脂卵黄の加水分解物の調製

前述の方法で得られた脱脂卵黄1kgに1.5mol/L塩酸溶液を15L加え、90℃で2時間処理した。次に、4mol/L水酸化ナトリウム水溶液でpH6.0に調整後、蛋白分解酵素（ナガセ生化学工業株式会社製、商品名「食品用精製パバイン」）20gを添加し50℃で6時間処理した。次に、この酵素処理液を90℃で30分間加熱処理を行い酵素を失活させ、活性炭2kgで脱色後、濾過し、得られた水溶液を電気透析で脱塩し凍結乾燥して、脱脂卵黄の酸及び酵素分解を併用した分解物を得た。

【0029】C. 容器詰めマヨネーズ様食品の調製  
前述の方法で得られた脱脂卵黄の加水分解物を用い実施例1の容器詰めマヨネーズ様食品の調製方法と同様な方法で容器詰めマヨネーズ様食品を得た。

#### 【0030】

【試験例】【試験例1】上述の実施例1乃至3で得られ

た容器詰めマヨネーズ様食品を遮光下35℃の促進条件で保存し、保存品と新たに製造した製造直後品とを試食し、各週毎の風味の変化を評価した。なお、表中の対照品とは、脱脂卵黄の加水分解物を含有させないで調製したものである。

#### 【0031】

【表1】

保存期間 [W]	対照品	実施例1 (酸分解)	実施例2 (75%分解)	実施例3 (酸と酵素併用)
0	—	—	—	—
1	—	—	—	—
2	—	—	—	—
3	—	—	—	—
4	—	—	—	—
5	±	—	—	—
6	±	—	—	—
7	+	—	±	—
8	+	—	±	—
9	++	±	+	±
10	++	+	+	+

#### 【0032】註 表中の記号

—：変化なし、あるいはごくわずか風味劣化しているものの問題ない範囲

±：わずかに風味劣化している

＋：風味劣化している

++：著しく風味劣化している

【0033】表1より、脱脂卵黄の加水分解物を含有させたものは、製造直後の風味が長期間維持されることが理解される。特に、脱脂卵黄の酸加水分解物、あるいは酸及び酵素分解を併用した分解物を用いたものは、より一層製造直後の風味が長期間維持されることが理解される。

【0034】【試験例2】実施例1において、脱脂卵黄の加水分解物の含有量を表2に示す量（乾物換算）に変えた以外は同様な方法で容器詰めマヨネーズ様食品を調製し、得られた各容器詰めマヨネーズ様食品を試験例1と同様な方法で評価した。

#### 【0035】

【表2】

保存期間 [W]	脱脂卵黄の加水分解物の含有量					
	0%	0.005%	0.01%	0.1%	1%	1.8%
0	—	—	—	—	—	—
1	—	—	—	—	—	—
2	—	—	—	—	—	—
3	—	—	—	—	—	—
4	—	—	—	—	—	—
5	±	—	—	—	—	—
6	±	±	—	—	—	—
7	+	±	—	±	—	—
8	+	+	±	±	—	—
9	++	+	+	+	±	±
10	++	++	++	+	+	+

【0036】表2より、製造直後の風味を長期間維持させるには、脱脂卵黄の加水分解物を少なくとも0.01重量%含有させたほうが好ましく、また、1重量%より多く含有させたとしても含有量に応じた効果が得られ難いことが理解される。

【0037】以上述べたように、本発明の容器詰めマヨネーズ様食品は、製造直後の風味を長期間維持できることから、容器詰めマヨネーズ様食品の更なる需要の拡大が期待される。